

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended, is respectfully requested.

Claims 22-44 are pending. Claims 1-21 were canceled previously. New claims 43 and 44 are added. Support for new claim 43 is found in at least specification Figs. 1-3. Support for new claim 44 is found in at least specification Figs. 4-6. Thus, no new subject matter is added.

The Office Action rejects claims 22-27 and 31-38 under 35 U.S.C. § 103 over Roberts et al. (U.S. 2002/0149312) in view of Varaprasad et al. (U.S. 2003/0087107) and Brussog (U.S. 6,270,236). The Office Action also rejects claims 28-30 and 39-42 under 35 U.S.C. § 103 over Roberts et al. in view of Varaprasad et al. and Brussog and further in view of Schaffer (U.S. 6,283,613).

Applicants respectfully traverse the rejections of previously pending claims 22-42. Independent claim 22 is directed towards a laminated glazing including two glass sheets, one or more thermoplastic interlayers, light-emitting diodes (LEDs) inserted between the two glass sheets, and a particular connecting circuit having electrodes.

In addressing claim 22, the Office Action asserts that Roberts et al. Figs. 3A - 5 discloses light emitting diodes between two glass sheets (items 14, 16, and 32). The Office Action also cites paragraphs 162 and 188 and Applicants note that Roberts et al. does not contain paragraph numbers 162 and 188. The Office Action acknowledges that Roberts et al. does not disclose one or more thermoplastic layers each being bound to an electrode. The Office Action cites to Varaprasad et al. as disclosing plastic interlayers and to Brussog as disclosing LEDs on a carrier panel bound to an electrode. The Office Action further asserts that it would have been obvious to modify the structure of Roberts et al. with the

thermoplastic layer of Veraprasad et al. (citing ¶¶ 124, 149, 158) for the purpose of an index of refraction matching material.

Applicants respectfully traverse the rejection of claims 22-42. Roberts et al. discloses packaged electronic components such as packaged LEDs. One such packaged LED, for instance, includes a casing made of two substrates that may contain die or chip LEDs where the package or casing includes a liquid or gel that removes heat from the LEDs via conduction or convection. Such packaged LEDs can be used as the LEDs that are included in the laminated glazing of the present invention (see e.g. specification page 7, lines 24-25 and page 6, lines. 6-8). However, as acknowledged by the outstanding Office Action, Roberts et al. does not disclose a laminated glazing including two glass sheets and one or more thermoplastic interlayers (that can be used as a window for buildings or for vehicles) as recited in independent claim 22. Veraprasad et al. discloses electrochromic elements, such as those used in rearview mirrors, windows and sunroofs in vehicles, for varying light transmittance through the window. ¶2. The electrochromic elements may include two glass sheets sandwiching a polychromic film. Veraprasad et al. does not disclose or suggest inserting LEDs between the glass sheets as recited in present claim 1.

Applicants also find no suggestion or disclosure in Veraprasad et al. that the thermoplastic layer is inserted for the purpose of an index of refraction matching material as suggested by the Office Action, nor is any citation provided as the basis for this suggestion. Instead, a potential is applied to the polychromic film in Veraprasad et al. in order to vary the light transmittance. Moreover, Applicants submit that it would not have been obvious to form a structure having both the heat conducting gel or liquid of Roberts et al. and the polymeric film of Veraprasad et al. as the two structures would likely interfere with each other and the optical properties desired by each reference. For example, Roberts et al. states that “the present invention exhibits a significantly lower thermal resistance than conventional

LED structures by extracting heat from the LED chip(s) via all surfaces LED chips simultaneously instead of from primarily only one surface as in typical prior LED devices.” Emphasis added, ¶ 56. Inserting a polymeric thermoplastic interlayer next to the LED would interfere with the Roberts et al. requirement that the LED surfaces be surrounded by the heat extracting material.

Brussog et al. does not disclose or suggest one or more plastic interlayers and does not provide any reasons to combine the teachings of Roberts et al. with Varaprassad et al.

Accordingly, Roberts et al., Varaprasad et al. and Brussog do not disclose or suggest the features of independent claim 22. It is submitted that independent claim 22 and dependent claims 23-42 which depend on claim 22, are in condition for allowance.

As noted above, dependent claims 28-30 and 39-42 were rejected over the same combination of references cited against claim 1 and further in view of Schaffer. Schaffer is directed towards an LED traffic light and is relied upon in the Office Action solely for features related to the casing. Accordingly, Schaffer also does not address the deficiencies discussed above with respect to Roberts et al., Varaprasad et al. and Brussog.

New claims 43 and 44 depend on claim 22 and are thus allowable over the cited references for at least the same reasons as claim 22. In addition, these claims further differ from Roberts et al. which, as explained above, requires the LED surfaces to be surrounded by a heat extraction material whereas these claims include the features that the LED chips or casing are substantially surrounded by one or more thermoplastic interlayers. Accordingly, dependent claims 43 and 44 are patentable over the cited references for at least this additional reason as well.

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for claims 22-44 is earnestly solicited.

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Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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